

REMARKS

Claims 1, 3-6, 10-16, 18, 19, 22, 23, 26, 27 and 29-39 have been rejected. Claim 30 stands rejected under 35 U.S.C. § 102(e) as anticipated by US Publication No. 2002/0161647 ("Gailey")¹; Claims 1, 3-6, 10, 11, 16, 18, 19, 22, 26, 27, 29 and 31-39 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Gailey in view of US Patent No. 6,571,279 ("Herz"); Claims 12-15 and 23² stand rejected under 35 U.S.C. § 103(a) as unpatentable over Gailey in view of Herz and further in view of US Publication No. 2003/0078788 ("Sussman"). The rejections are respectfully traversed.

Applicant respectfully disagrees with several characterizations of the disclosures of both Gailey and Herz. Gailey broadly describes a system and method for tracking purchases in a location-based services system (Gailey, ¶2). The Office Action cites ¶¶43 and 44 of Gailey as disclosing the limitation of Claim 1 of "determining a location for each of the plurality of business representatives," where the preamble has defined "a business having a plurality of business representatives." The Application further defines what is meant by "business representative" by describing a "business [that] comprises a plurality of representatives situated at different geographical locations, with the business's products being supplied by each of the representatives" (Application, page 4, lines 15-16). But ¶¶43 and 44 of Gailey instead describe a remote terminal 40 that has an assigned geographic indicator, or has the capability of designating a different geographic indicator. This remote terminal 40 operates as a subscriber terminal (see Gailey, ¶42, describing the connection of remote terminal 40 to a subscriber portal web server

¹ It is believed that the basis for rejection of Claim 30 provided in the Office Action is incorrect. Claim 30 is dependent from Claim 26, which stands rejected under 35 U.S.C. § 103(e). Since Claim 30 is thus construed to include all the limitations of Claim 26 (see 37 C.F.R. § 1.75(c)), it cannot properly be rejected under 35 U.S.C. § 102 with the acknowledged lack of certain limitations of Claim 26 being disclosed in Gailey. Applicant accordingly treats the rejection of Claim 30 herein as a rejection under 35 U.S.C. § 103(a) as unpatentable over Gailey in view of Herz.

² There appears to be an error in the Office Action, which identified Claim 12 twice at ¶6 (page 13). Applicant understands Claim 23 to have been rejected under 35 U.S.C. § 103(a) as unpatentable over Gailey in view of Herz and further in view of Sussman in view of the comments made at pages 15-16 of the Office Action.

44). It is not a “business representative” having the required relationship to a business so that the claim limitation is not disclosed.

The Office Action cites ¶108 of Gailey as disclosing the limitation of Claim 1 of “determining a location for each of a plurality of competitor representatives comprised by one or more competitors to the business.” The Application further clarifies that a competitor has “[a] similar business structure [to that of the business], each such competitor comprising a plurality of representatives distributed geographically” (Application, page 4, lines 18-20). But ¶108 of Gailey describes a search query entry form generated from an advertising effectiveness routine used to retrieve search results. There is no description of determining locations for competitor representatives having the required relationship to a competitor of the business. Indeed, it is unclear who “competitors” would be to the “business” with the Office Action’s reliance on ¶¶43 and 44 of Gailey drawing a correspondence of the business with a subscriber computer. The mere description of retrieving search results with defined business data and usage data does not teach or suggest the claim limitation. It is believed generally that the description of advertising effectiveness in Gailey is concerned with how effective advertising has been for a particular entity, and not concerned with locations for a plurality of competitor representatives.

Herz broadly describes a “Location Enhanced Information Delivery System” that optimizes a match between advertiser and other information purveyors with recipients, sometimes using location information for the recipients (Herz, column 1, line 48, through column 2, line 25). The Office Action cites column 25, lines 26-67 and column 14, lines 1-12 of Herz as disclosing the claim limitation of “from location information in the at least one populated database, calculating a probability that quantifies a level of competition to the business provided by the one or more competitors in terms of a distance measure between the business and competitor representatives.” But while the cited portions of Herz provide some description of details of implementing the optimized match, they provide no description of any quantified level of competition between business and competitor representatives. There is manifestly no description of any calculation of a probability that would quantify such a level of competition.

The Office Action cites column 26, lines 5-28, column 23, lines 46-58, column 18, lines 7-34, and column 18, lines 56-67, as disclosing the claim limitation of “correlating the quantified level of competition with demographic data corresponding to the location information in the at least one populated database.” While the cited portions have some general allusions to demographic information and to analyzing customer behavior, they do not disclose the specific limitation of correlating a quantified level of competition with demographic data. Since Herz never describes the calculation of the quantified level of competition, it lacks any such information with which to perform the required calculation.

In addition to noting several instances above where limitations of Claim 1 are not taught or suggested by the cited art, Applicant reiterates that the Office Action has not established that cited portions of Gailey are prior art to the application. The filing date of Gailey is April 26, 2002, i.e., later than the December 19, 2001, filing date of the application. Gailey claims the benefit of an earlier filing date of April 27, 2001, for US Provisional Application No. 60/286,916. The MPEP provides the following instructions in determining the extent to which the filing date of a provisional application may be relied upon for a rejection under 35 U.S.C. § 102(e):

The 35 U.S.C. §102(e) critical reference date of a U.S. patent or U.S. application publications and certain international application publications entitled to the benefit of the filing date under 35 U.S.C. 119(e) is the filing date of the provisional application with certain exceptions if the provisional application(s) properly supports the subject matter relied upon to make the rejection in compliance with 35 U.S.C. 112, first paragraph.

(MPEP 2136.03.III, emphasis in original)

The MPEP thus specifically notes that the written description, enablement, and other requirements set forth in 35 U.S.C. § 112, ¶1, must be met before the filing date of the provisional application may be relied upon for a rejection under 35 U.S.C. §102(e).

Applicant has obtained a copy of US Provisional Application No. 60/286,916 from the Office and attaches a copy for the Examiner’s convenience as Exhibit 1. It appears

from an examination of that document that at least portions of Gailey relied on in the Office Action lack either written-description or enablement support. For example, the Office Action's reliance on ¶¶110-113 for the limitation of Claim 1 reciting "populating at least one database with the locations for the business representatives and the locations for the competitor representatives" appears to lack adequate support. Applicant remains willing to address the issue more fully if the Office clarifies the basis for its position that the cited portions of Gailey are indeed prior art to the claims.

While the above remarks have been directed to independent Claim 1, similar remarks apply also to independent Claims 16 and 26, which are accordingly also believed to be patentable. The dependent claims are believed to be patentable by virtue of their dependence from patentable claims.


Conclusion

In view of the foregoing, Applicant believes all claims now pending in this application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

Date: 2005 May 19


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Summary:

The present invention enables a consumer to access location based services via multiple access methods such as voice, wireless application protocols (such as WAP) and Web protocols. The method described encompasses the full lifecycle of location based service delivery including content management, consumer management, content delivery, advertising management, advertising reporting, advertising delivery, usage tracking, usage mining and reporting, billing and settlements.

Drawings:

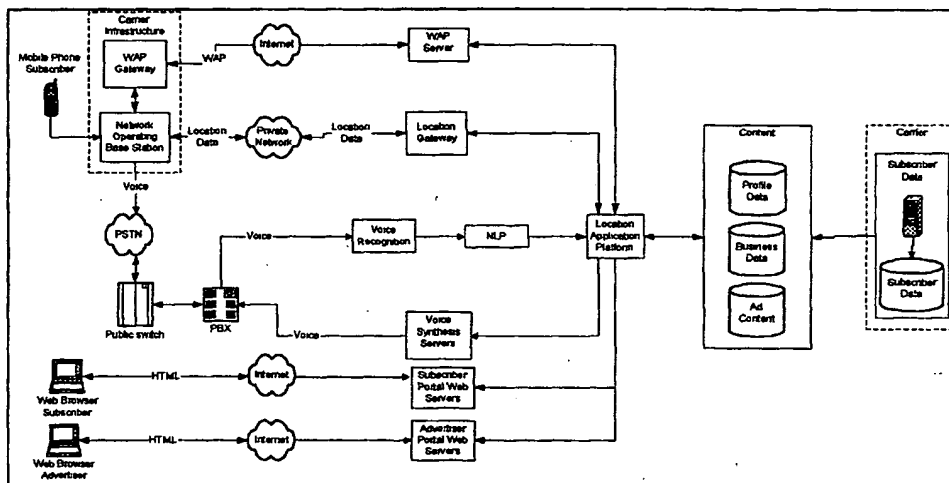


Figure 1

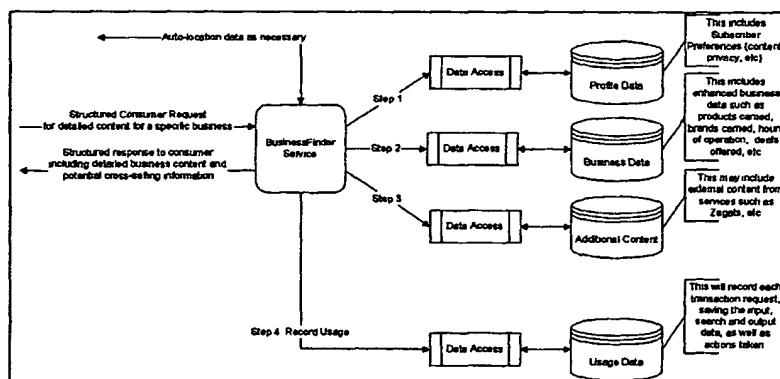


Figure 2

Description:

Referring to Figure 1, via this invention, location based services are delivered to consumers and managed by content providers. The initial services deployed over this platform include an enhanced directory assistance capability via a voice recognition capability, wireless application protocol capability and web application capability. The system leverages data contained in four logical entity groupings:

- **Profile Data** – This group of logical entities contains all relevant information regarding the consumers of the system, including but not limited to:
 - Consumer Name
 - Consumer Phone Number
 - Consumer ID
 - Consumer Password
 - Consumer Home Address
 - Consumer Home Phone Number
 - Consumer Email Address
 - Consumer Pager Address
 - Consumer Service Subscriptions, detailing the consumers chosen level of participation in one or more services
 - Consumer Privacy Preferences, detailing information denoting the willingness to share a consumers private data with others based on data type, requestor, service, etc.
 - Consumer Service Preferences, detailing any specific saved information that is relevant to any of the services which a consumer may use, such as:
 - Named locations (such as the address for a consumers work location, or the address(es) of a consumers friend(s))
 - Named interests (such as NBA basketball, or Jazz music)
 - Preferred asynchronous communication method (such as email or pager) listed by service and/or service/content provider
- **Business Data** – This group of logical entities contains all relevant information regarding the businesses listed within the enhanced directory assistance capability, including but not limited to:
 - Business Name
 - Business Phone Number
 - Business Text Description
 - Business Audio Description
 - Business Video Description
 - Business ID
 - Business Password
 - Business Category/Categories
 - Advertising Participation Level
 - Advertising Campaign information such as:
 - Parameters that define target market
 - Campaign Identification Code
 - Advertising Content
 - Special Deals/Discounts
 - Saved Mining/Reporting Parameters
 - Brands Sold
 - Brands Serviced
 - Product Types Sold
 - Product Types Serviced
 - Product Models Sold

- Product Models Serviced
 - Product Model Prices
 - Service Prices
 - Inventory List (by Brand, Product Type and Product Model)
- Additional Content – This group of logical entities contains any additional content that is leveraged by the system, possibly including but not limited to:
 - Business Ratings (via external evaluation service)
 - Weather
 - Driving Directions
 - Maps
 - Traffic
 - Movie Listings
- Usage Data – This group of logical entities contains all recorded information regarding consumer transactions, possibly including but not limited to:
 - Consumer ID (or a unique hash of Consumer ID)
 - Date
 - Time
 - Service
 - Request Type
 - Search Criteria
 - Matched Data
 - Action Taken

Consumers are provided the ability to search via a remote terminal for a business that will satisfy specific purchase or service requirements via multiple access methods (voice, wireless application protocol or web application protocol).

The possible request parameters include (but are not limited to) one or more of the following:

- Product Type
- Service Type
- Business Name
- Business Category
- Product Name (or Model Name)
- Product Brand
- Price level
- Business or service ratings (i.e. external evaluation from a rating service such as AAA)
- Whether special deals are provided
- Location (auto-location, predefined location, or consumer-specified location)
- Hours of Operation
- Availability of service (for example: availability of a open table at a specified time at a restaurant)

- Company specified within favorites for a category (i.e. name of favorite coffee house franchise)

Based upon the parameters included in the search, the system will identify and respond with the most appropriate matches. The consumer can then refine their search, or review details about each of the matched listings.

Optionally, consumers have the ability to "opt-in" to "push" content and advertising services. Push services are defined as services which proactively deliver content to the consumer, rather than delivered only following a immediately prior request by the consumer. The preferences of the consumer regarding these types of services are stored within the Profile Data entity grouping. For example, a consumer

Businesses have the ability to manage their content and mine usage data via the Advertiser Portal. The Advertiser Portal is a Web-Based Application that enables the following capabilities:

- Campaign Management –
 - Create Campaign - The Create Campaign option enables an advertiser in order to create a location based advertising campaign. As part of this capability, the Advertiser would define the market segment at which the advertising is targeted. Then the advertiser would define the advertising content that would be delivered to the target market, as well as the mechanism of delivery (i.e. pushed to each consumers cell phone, or presented only to a consumer when they make a relevant enhanced directory assistance search).
 - Edit/Delete Campaign - The edit/delete campaign option allows the advertiser to modify or delete an existing campaign.
- Business Profile Management
 - Create Business Listing – This option enables a business to define their set of business data (see above for a list of content within the business data).
 - Edit Business Listing – This option allows the business to modify or delete their business listing.
- Mining/Reporting
 - Advertising Effectiveness - The advertising effectiveness interface utilizes the usage data and advertising content to generate analysis surrounding the effectiveness of location based advertising campaigns. The analysis will address questions such as "How many people received my campaign in the downtown area of Atlanta". The information provided to the advertisers provides them insight to quantify the results of campaigns created in the location based service system through the campaign management tool.

- **Predictive Modeling** - Predictive modeling is the capability of forecasting the customers likely to response to offers, listings and deals. Examples of the type of feedback the consumer will receive include (but not limited to) the following:
 - Identifying customers likely to respond to their campaign by customer segment
 - Identifying customers likely to request a campaign or listing by customer segment
 - Identifying demands by peak time or day

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Summary:

The present invention enables a business owner or advertiser via a web connected computer terminal to access the location based service system to create and manage advertising content. This is accomplished with a web based user interface that allows the user the ability to create and manage advertising content.

Drawings:

Figure 3

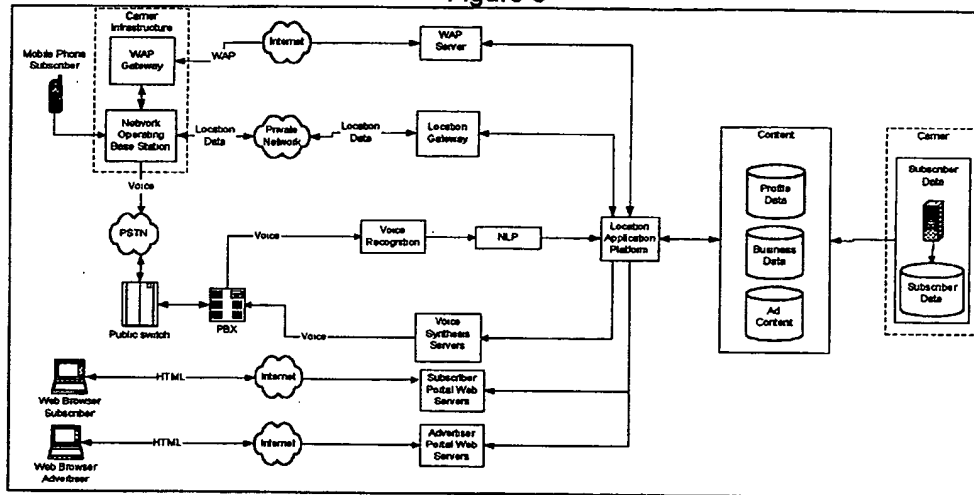


Figure 4

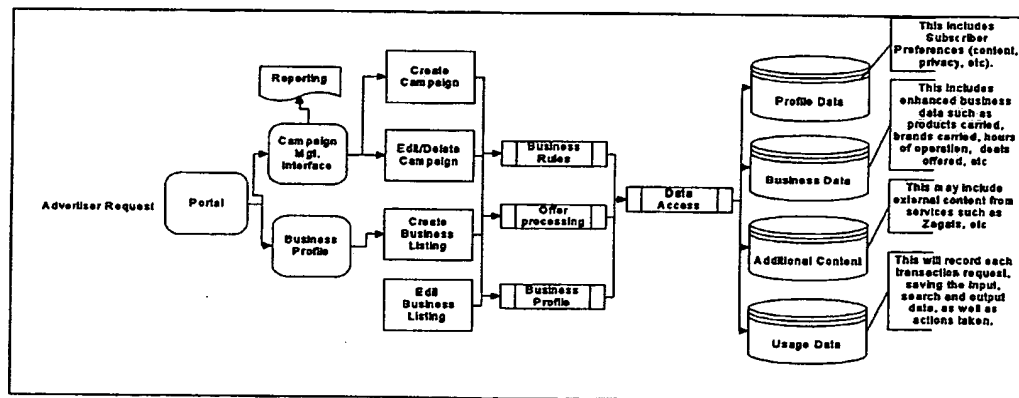


Figure 3

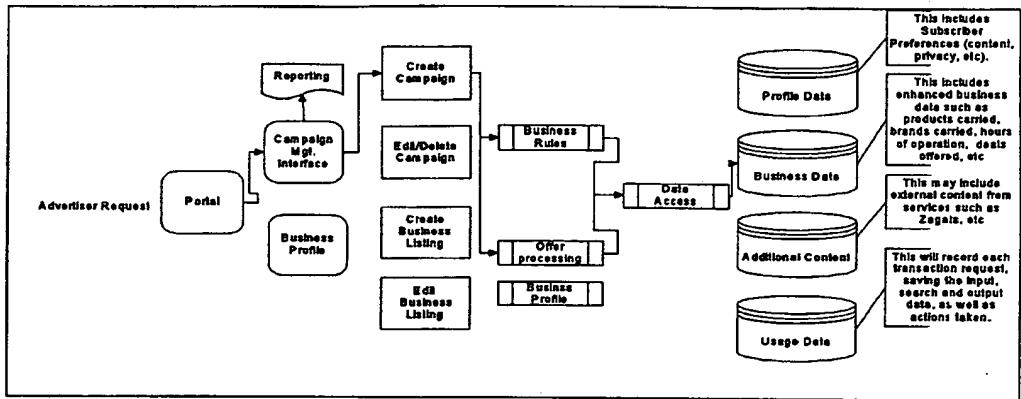


Figure 4

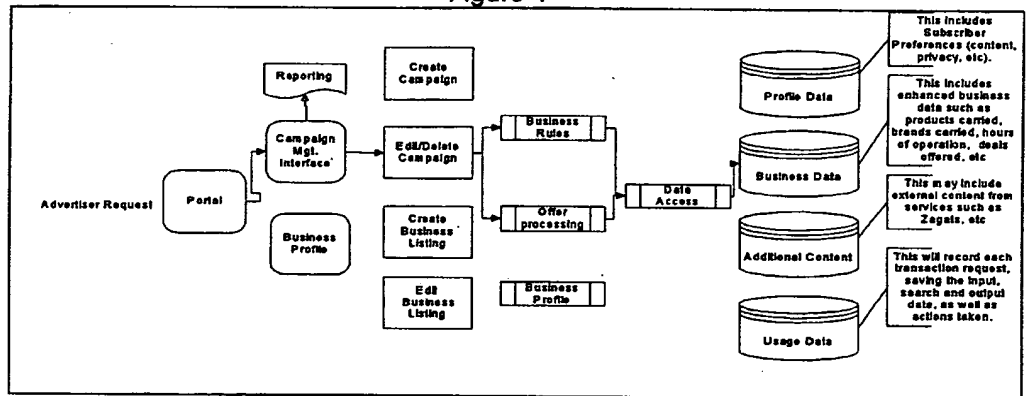


Figure 5

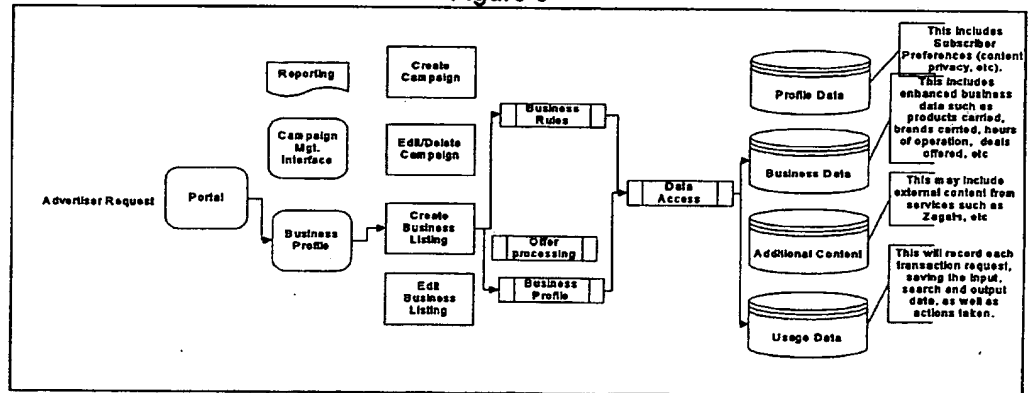
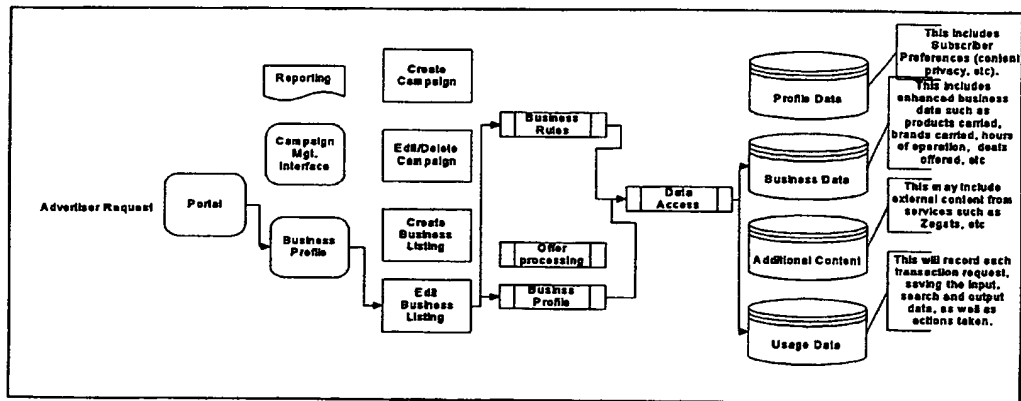


Figure 6



Description:

Referring to Figure 1, via this invention, advertiser subscribers are provided the ability to create and manage advertising campaigns within the location base service system from a web connected computer.

In Figure 1, the advertiser would access the Advertiser Portal through a web browser and the portal would serve as a gateway to the location application platform. Business data is captured through the advertisers interaction with the advertising portal.

There are two options within the portal that allows the advertiser to create and manage content. Referring to Figure 2, within the portal the user has the ability to select Campaign Management and Business Profile. Within each of these functions there are two major options (at a minimum) available to the user.

- Campaign Management
 - Create Campaign
 - Edit/Delete Campaign
- Business Profile
 - Create Business Listing
 - Edit Business Listing

The components that support the above functions include:

- Business Rules
- Offer Processing
- Business Profile
- Data Access

The first system option-Create Campaign for the invention is illustrated in FIG 3. The Create Campaign option captures data from the advertiser in order to create a location based advertising campaign. The create campaign user interface includes detailed parameters for the campaign. First the advertiser enters the data into the user interface and submits the information for processing. This information is passed into various components including campaign and business

rules. If the customer enters in deal information along with the advertisement the create campaign tool and the offer processing component will be used to process the request.

The second system option—Edit/Delete Campaign for the invention is illustrated in FIG 4. The edit/delete campaign option allows the advertiser to modify or delete an existing campaign. When the advertiser selects the option a list of existing campaigns will be displayed.

When the advertiser wishes to modify the campaign he simply selects the campaign in the list and the campaign data entry fields are presented. The advertiser can change the parameters for a campaign and submit the changes. This information is passed to the campaign component and the business rule component for processing into the business database.

When the advertiser wishes to delete the campaign he simply selects the campaign in the list and the campaign data entry fields are presented. The advertiser can select the delete option in order to delete the campaign. This information is submitted via the campaign component and the campaign is deleted from the business database.

The third system option—Create Business Listing for the invention is illustrated in FIG 5. The Create Business Listing option captures data from the advertiser in order to create a location based business listing. First the advertiser enters the business listing data into the user interface and submits the information for processing. This information is passed into various components including the Business profile component and the business rules component. This information is then passed into the data access component in order to store the business listing data into the business database.

The fourth system option—Edit Business Listing for the invention is illustrated in FIG 6. The Edit Business Listing option allows the user to update a location based business listing. First the advertiser enters the data into the user interface and submits the information for processing. This information is passed into various components including the Business profile component and the business rules component. This information is then passed into the data access component in order to update the business listing data within the business database.

The components that support the above services include:

- ☐ Business Rules
- ☐ Offer Processing
- ☐ Business Profile
- ☐ Data Access

The details for the Business Rule, Offer Processing, Business Profile and the Data Access components of the campaign management portal are described below.

The business rule component is the collection of parameters associated with a campaign when interacting with the location based service system. The parameter information captured is utilized in the implementation of the advertising campaign. An example might include: For the '2 for 1 drink special', target men between 21-35 that request a bar or restaurant in Atlanta. Rules criteria may include, but is not limited to:

- ☐ Demographics
 - ☐ Gender
 - ☐ Age
 - ☐ Ethnicity
 - ☐ Marital Status
 - ☐ Children
 - ☐ Income
 - ☐ Special Interests
 - ☐ Hobby
 - ☐ Education
 - ☐ Homeowner
 - ☐ Car Owner
- ☐ Target Market
 - ☐ City
 - ☐ State
- ☐ Location
 - ☐ Address
 - ☐ Radius
- ☐ Length of Time for the campaign
 - ☐ Start Date
 - ☐ End Date
- ☐ Historical Interaction
 - ☐ Category
 - ☐ Listing

The offer process component is the information associated with creating a deal or a special offer. The advertiser can enter into the campaign management process a detailed description of the deal, the market for the deal as well as parameters or rules associated with deal.

- ☐ Deals
- ☐ Special Offers

The Business Profile component collects the advertiser profile information. This information is used to create a business profile listing for the advertiser. This information includes:

- ☐ Business Name
- ☐ Business Category
- ☐ Product Types
- ☐ Service Types
- ☐ Franchise
- ☐ Business email address or URL
- ☐ Product Names and/or Model Names Identification Codes
- ☐ Product Brands

- ☐ Prices
- ☐ Location/Address
- ☐ Hours of Operation
- ☐ Category Listing Selections

The data access component is used to access the database, which holds all of the Location Based Service Network information. This component is used to retrieve data as well as enter data into the database.

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Summary:

The present invention enables a consumer to flexibly access location sensitive business content and advertising via remote terminals (including but not limited to cellular phones) by accessing a directory assistance/location based system. This is accomplished by providing multiple search methods into the content via multiple access channels, leveraging natural language processing and voice recognition, customizing the content based upon location (either current, pre-defined, or ad-hoc) and consumer profile.

Drawings:

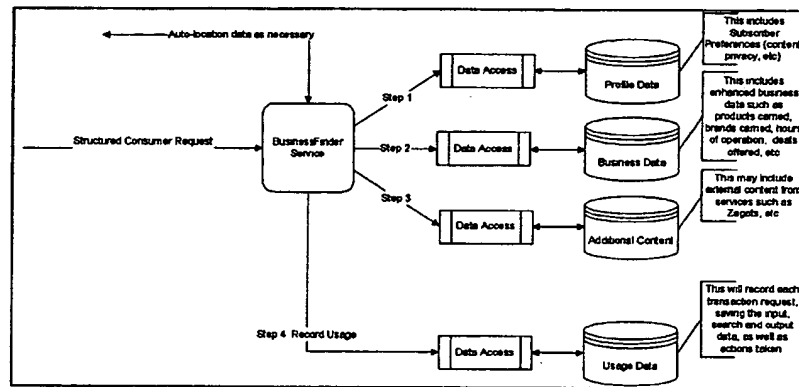


Figure 5

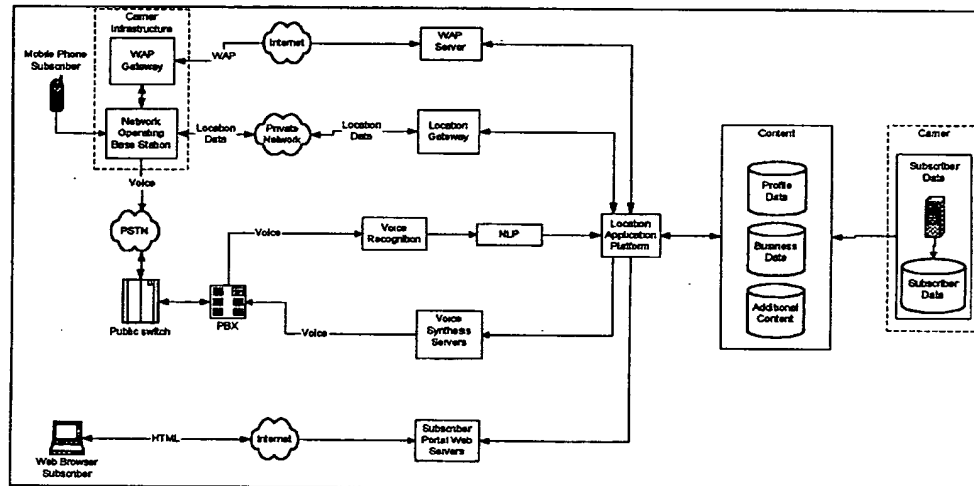


Figure 6

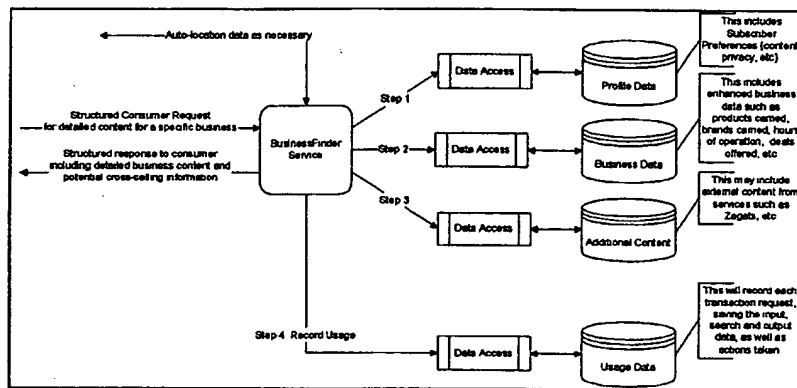


Figure 7

Description:

Referring to Figure 1, via this invention, consumers are provided the ability to search via a remote terminal for a business that will satisfy specific purchase or service requirements via multiple access methods (voice, wireless application protocol or web application protocol).

The possible request parameters include (but are not limited to) one or more of the following:

- Product Type
- Service Type
- Business Name
- Business Category
- Product Name (or Model Name)
- Product Brand
- Price level
- Business or service ratings (i.e. external evaluation from a rating service such as AAA)
- Whether special deals are provided
- Location (auto-location, predefined location, or user-specified location)
- Hours of Operation
- Availability of service (for example: availability of a open table at a specified time at a restaurant)
- Company specified within favorites for a category (i.e. name of favorite coffee house franchise)

Based upon the parameters included in the search, the system will identify and respond with the most appropriate matches. The consumer can then refine their search, or review details about each of the matched listings.

Referring to Figure 4, Consumers make requests into the system via one of three methods: via a voice access method (Wireless or Wireline), via a wireless application protocol such as WAP, or via a web application protocol such as HTML (or any XML-based markup language). The mechanism that forwards

user requests to the specific service handler is based upon the chosen access method.

For a voice access method, the consumer initiates a voice call from a phone. If the call is initiated from a wireless phone (i.e. cellular), the voice call is routed to the system's PBX via a Base Transceiver Station, Base Station Controller, Mobile Switching Center and the PSTN. Once this voice call reaches the PBX it is forwarded to a server for signal digitization and voice recognition. Then the words chosen as the highest probable match for the signal are passed to the Natural Language Processing server. This server assesses the holistic validity of the chosen words and interprets the likely context and meaning from the words. It then identifies the application services required to fulfill the request, structures the necessary message (as required by the appropriate application service), and passes this message to the relevant application service.

For a wireless application protocol (via a phone browser) method, the consumer accesses the application service via a WAP server via the Internet.

For a web application protocol (via a web browser) method, the consumer accesses the application service via a Web server via the Internet.

The application service then creates a data search based upon the parameters of the search request, the historical behavior of the consumer, the demographic and socio-economic profile of the consumer, and the stated preferences of the consumer (as defined in a profile which they maintain). This data search is then applied to the database of content.

Once the data search identifies a set of businesses that match (to varying degrees) the request, an additional processing step takes place to sort the listing of businesses. This sorting mechanism is based on (but not limited to) one or more of the following factors:

- Traveling distance from desired business location (as defined by the consumer)
- Advertising participation level of the business (businesses that opt-in to other advertising services may be sorted higher in the list than business that don't participate in other advertising services).
- % match of the business to the consumers request (other things being equal, a business that perfectly matches the consumers request would likely be sorted higher than a business that only partially matches the consumers request).

Once the set of businesses is sorted based upon this sorting mechanism, the system responds to the consumer with the sorted list based upon the access channel that the request was made (voice, wireless application protocol or web application protocol).

If the original request was made via a voice call, the system will create a synthesized voice response, and send that to the consumer across the voice channel via the PBX, PSTN, MSC, BSC, and BTS.

If the original request was made via wireless application protocol (from a phone browser), then an appropriate response would be created leveraging a markup language such as WML, and this response would be transmitted back to the consumer's phone browser.

If the original request was made via web application protocol (such as HTML/HTTP), the system would generate a response HTML page and transmit that back to the consumer via the Internet.

Once the response is sent back to the user, the system logs the necessary information regarding the consumer's usage of the system (i.e. information held within the request and response) to a database. This can then be used for further personalization of content, or passive mining.

Referring to Figure 7, once a consumer chooses a business from the sorted list they have the ability to review details about the business. These details would include (but not be limited to):

- Products Offered
- Brands Offered
- Services Offered
- Business Description
- Recorded Business Description (if enabled via the access channel)
- Address
- Directions (based upon current location)
- Phone number
- Web site address
- Email address
- Allowable Payment methods
- Hours of Operation
- Special Deals Offered (such as \$2 off purchase, etc)

This is accomplished by making an additional request via the access method initially chosen for the interaction. As described above, this request is routed to the appropriate application service, and this service satisfies the request by creating an appropriate data search and applying this data search to the database of content.

If applicable, once the content is retrieved from the database, an additional cross-selling advertisement is determined. This determination is made by creating a data search based upon the category and location of the business listing chosen by the consumer, and searching the database of content for any businesses that wish to advertise their service if a consumer chooses a category and location that is correlated with their business. For example a restaurant may decide to participate in an advertising service that enables them to present their information to the consumer whenever the consumer searches on movies, and finds a theater near the restaurant. This would occur because the restaurant owner wants to entice consumers to eat dinner at the restaurant prior to seeing a movie.

The data from the cross-selling data search and the original business detail search are combined into a response appropriate for the initially specified access method, and the response is sent to the consumer leveraging the initially specified access method.

The consumer then has the ability to review the detail associated with any business that arise from the cross-selling data search (which is accomplished in the same manner as described above for reviewing detail about a business).

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Summary:

The present invention enables a business owner or advertiser via a web based computer terminal to access the location based service system to mine usage information. This is accomplished with a web based user interface that allows the user the ability to execute mining analysis procedures and to create on-demand reporting of customer location data, transactional data, customer segmentation data, advertising data, and predictive modeling.

Drawings:

Figure 8

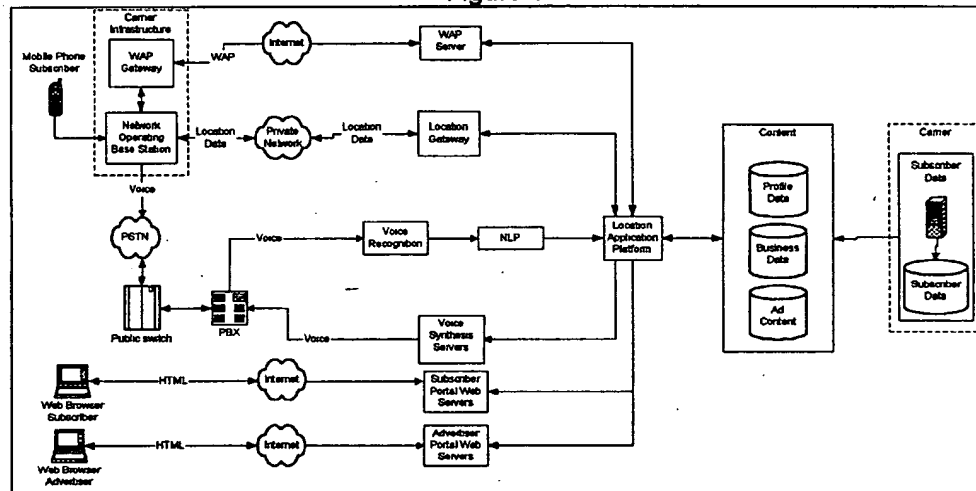


Figure 9

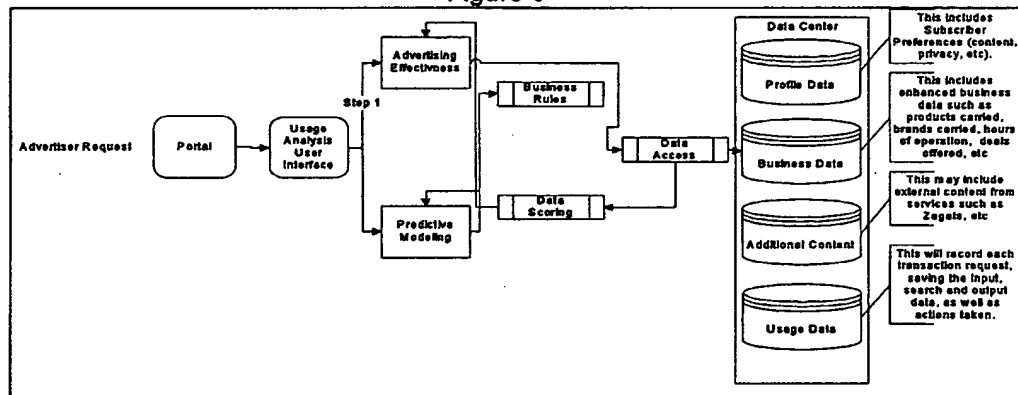


Figure 3

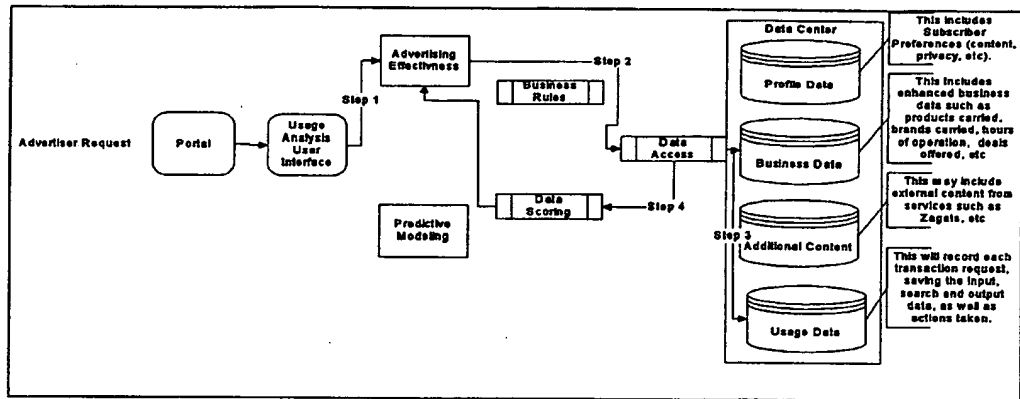
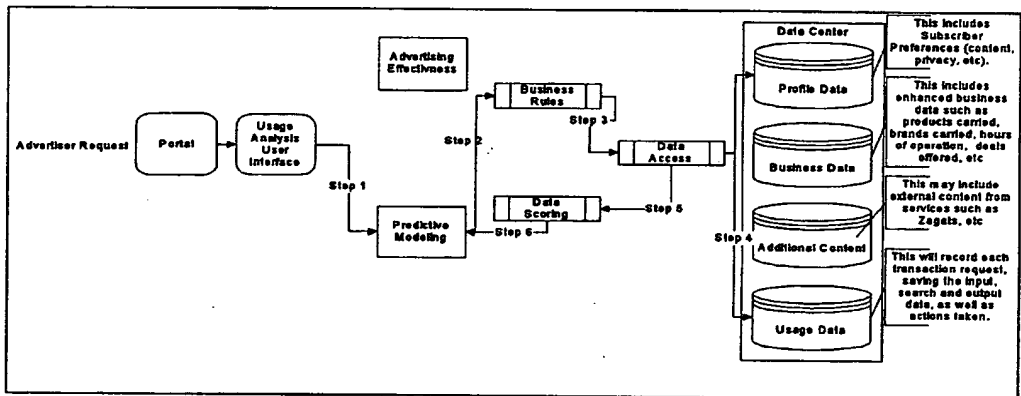


Figure 4



Description:

Referring to Figure 1, via this invention, advertiser subscribers are provided the ability to research usage trends and transactions of the location base service system via a web application. In Figure 1, the advertiser would access the capability via an Advertiser Portal through a web browser, which serves as a gateway to the application platform.

Referring to Figure 2, within the usage analysis user interface the advertiser will select one analysis option to generate detailed usage analysis from the location based service system. The system will generate analysis based off of two categories of analysis options. The options include (but are not limited to) the following:

- ☐ Advertising Effectiveness
- ☐ Predictive Modeling

The user will select fields within each of the tools to create an online query. Based off of the inputs the tool will determine the necessary components to access in order to generate the correct analysis.

The first system option-Advertising effectiveness for the invention is illustrated in FIG 3. The advertising effectiveness interface utilizes the usage data and advertising content to generate analysis surrounding the effectiveness of location based advertising campaigns. The analysis will address questions such as "How many people received my campaign in the downtown area of Atlanta". The information provided to the advertisers provides them insight to quantify the results of campaigns created in the location based service system through the campaign management tool.

The user must first select the input options used for searching. Selecting and submitting this information build a query used to explore the advertising campaign data stored in the business content database. The system retrieves data from the usage database to match the system request parameters. The system will then display the resulting response via the web browser.

The following is a list of inputs (at a minimum) that may be selected within the Advertising Effectiveness tool:

- ☐ Campaign
- ☐ Date
- ☐ Location Information
- ☐ Category
- ☐ Type of Listing Category
- ☐ Competitive Listings Categories
- ☐ Campaign
- ☐ Date To & From

Examples of the type of feedback the user will receive include (but not limited to) the following:

- ☐ Measure number of customers reached
- ☐ Frequency of ad or listing
- ☐ Competitive analysis comparing advertiser listing frequency to category
- ☐ Cost per Impression
- ☐ Number of Customers reached by top 3 demographic segments
- ☐ Demographics
 - ☐ Gender
 - ☐ Age
 - ☐ Ethnicity
 - ☐ Marital Status
 - ☐ Children
 - ☐ Income
 - ☐ Special Interests
 - ☐ Hobby
 - ☐ Education
 - ☐ Homeowner
 - ☐ Car Owner
- ☐ Target Market
 - ☐ City
 - ☐ State

- Location
 - Address
 - Location at time of historical interaction

The second option—Predictive modeling for the invention is illustrated in Fig 5. Predictive modeling is the capability of forecasting the customers or prospects likely to respond to offers, listings and deals. Examples of the type of feedback the user will receive include (but not limited to) the following:

- Identifying customers likely to respond to their campaign by customer segment
- Identifying customers likely to request a campaign or listing by customer segment
- Identifying demands by peak time or day

The user must first enter into the predictive modeling tool the proposed future campaign/deal as well as the business rules associated with it. Entering and submitting this information build a query with the necessary search parameters to explore the usage profile database. The data access component searches the database to find data elements that match the query. The obtained results are passed back to the data scoring component to determine the statistical probability of a campaign's success. These results are returned to the predictive analysis component to be displayed through the usage analysis user interface.

The Predictive Mining input options include (but are not limited to) the following:

- Campaign
- Target Date
 - Start Date
 - End Date
- Type of Listing Category
- Demographics
 - Gender
 - Age
 - Ethnicity
 - Marital Status
 - Children
 - Income
 - Special Interests
 - Hobby
 - Education
 - Homeowner
 - Car Owner
- Target Market
 - City
 - State
- Location
 - Address
 - Location at time of historical interaction

Summary:

The present invention enables a Location Based Services system to route a call to a human operator when a mechanized voice recognition system fails to successfully handle a consumer request.

Drawings:

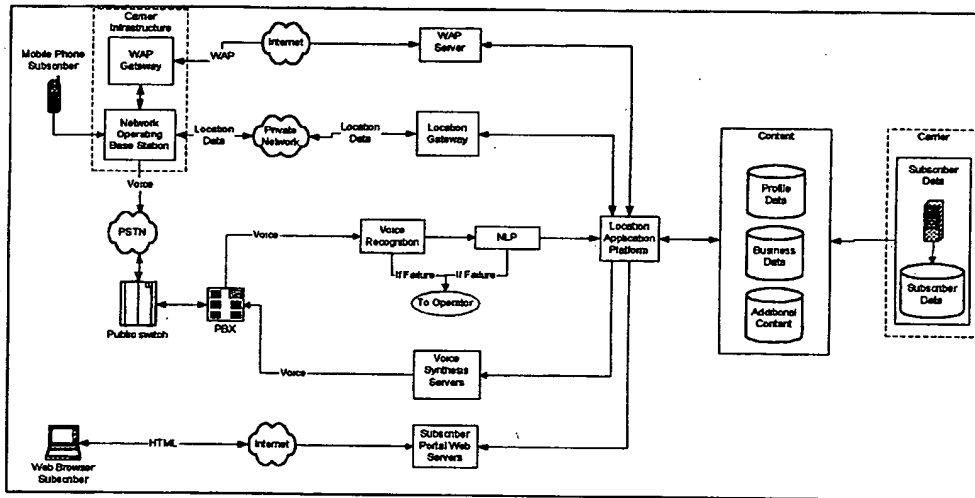


Figure 10

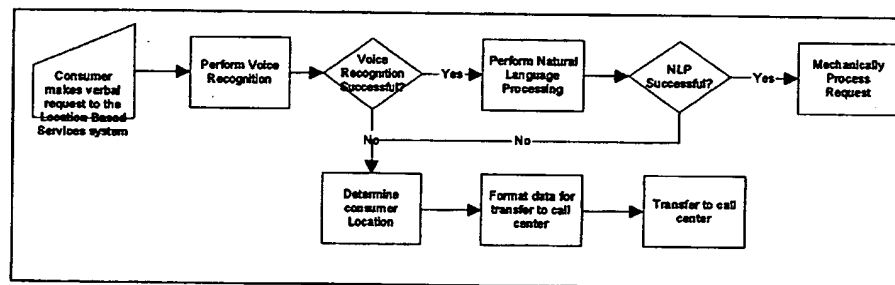


Figure 11

Description:

Referring to Figure 4, Consumers make requests into the system via one of three methods: via a voice access method (Wireless or Wireline), via a wireless application protocol such as WAP, or via a web application protocol such as HTML (or any XML-based markup language). The mechanism that forwards user requests to the specific service handler is based upon the chosen access method.

For a voice access method, the consumer initiates a voice call from a phone. If the call is initiated from a wireless phone (i.e. cellular), the voice call is routed to the system's PBX via a Base Transceiver Station, Base Station Controller, Mobile Switching Center and the PSTN. Once this voice call reaches the PBX it is forwarded to a server for signal digitization and voice recognition. Then the

words chosen as the highest probable match for the signal are passed to the Natural Language Processing server. This server assesses the holistic validity of the chosen words and interprets the likely context and meaning from the words. It then identifies the application services required to fulfill the request, structures the necessary message (as required by the appropriate application service), and passes this message to the relevant application service.

When either the voice recognition or natural language processing servers fail to successfully process the voice input, the voice call must be forwarded to an human operator for completion as shown in Figure 11. The sequence of this process is as follows:

- Consumer speaks their request
- The voice input is digitized and processed by a voice recognition server
- If the voice recognition server fails to recognize the voice input to a specified level of confidence, then:
 - The location of the user is identified:
 - A location data request message is created based upon the consumer phone number and location gateway technology provided by the wireless provider.
 - This location data request is forwarded to the location gateway of the wireless provider.
 - The response from the location gateway is parsed and the location value is extracted.
 - A message is created that includes (but is not limited to) the caller phone number and their location information.
 - The consumer is notified that their call is being processed via a synthesized or recorded message.
 - The message and call is forwarded to the operator call routing system for completion.
- If the voice recognition server successfully recognizes the voice input to a specified level of confidence, then:
 - The identified phonemes and/or words identified by the voice recognition server are transmitted to the natural language processing server.
 - The natural language processing server attempts to determine the context and intent of the consumer's request.
 - If the natural language server fails to recognize the context or intent of the consumer's request to a specified level of confidence, then:
 - The location of the user is identified:
 - A location data request message is created based upon the consumer phone number and location gateway technology provided by the wireless provider.
 - This location data request is forwarded to the location gateway of the wireless provider.
 - The response from the location gateway is parsed and the location value is extracted.

- A message is created that includes (but is not limited to) the caller phone number and their location information.
- The consumer is notified that their call is being processed via a synthesized or recorded message.
- The message and call is forwarded to the operator call routing system for completion.
- If the natural language processing server successfully recognizes the context and intent to a specified level of confidence, then:
 - The necessary application service(s) are identified to satisfy the request.
 - The appropriate message is created to make the application service request.
 - The service request is made.

The resulting information is provided back to the consumer via a synthesized voice message.

150365915.043704

Summary:

The present invention enables the ability to track purchases that were recommended or advertised through the location based system to the consumer. This is accomplished by tracking electronic transactions on purchases made.

Drawings:

Figure 12

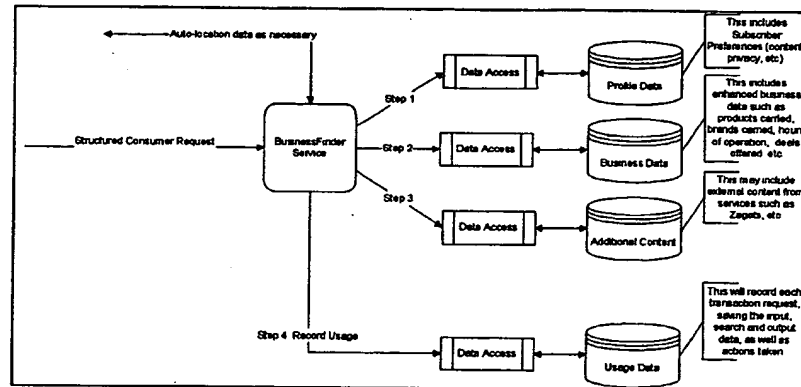


Figure 13

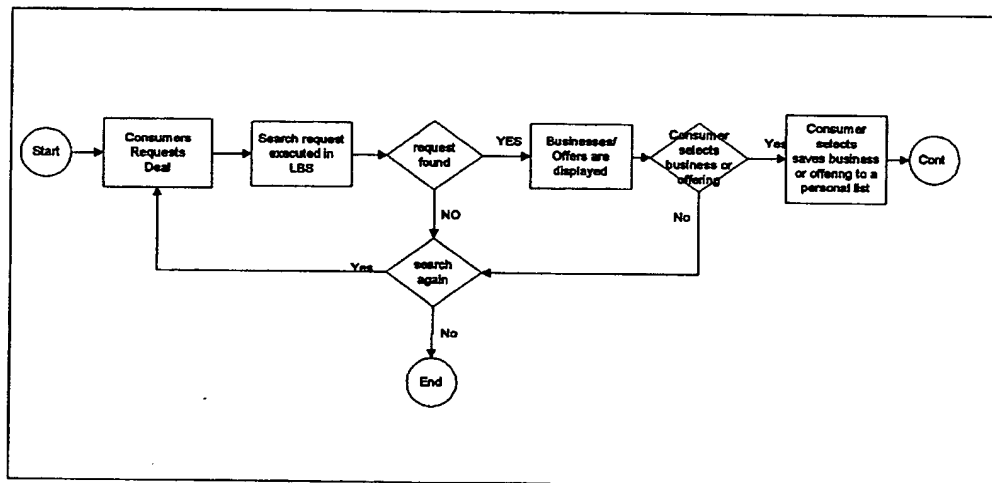


Figure 3

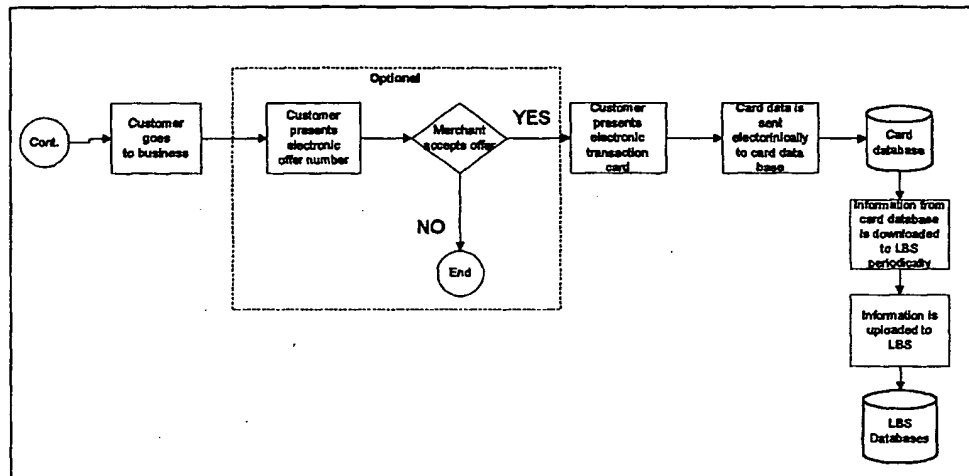
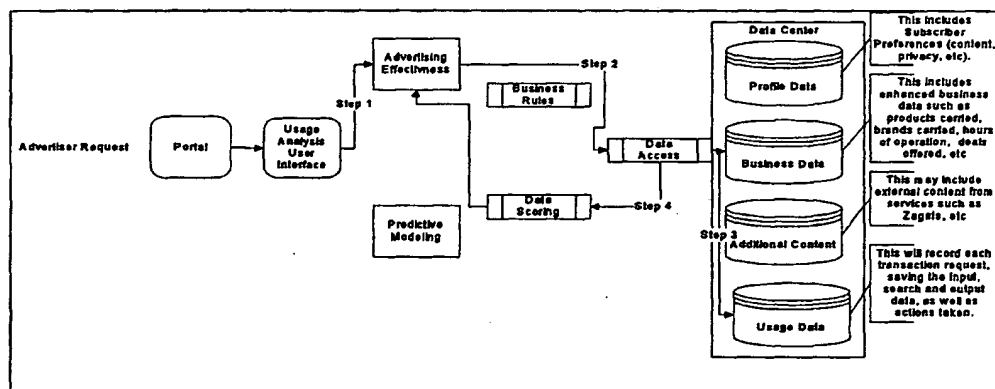


Figure 4



Description:

Referring to Figure 1, consumers are provided the ability to search via a remote terminal for a business that will satisfy specific purchase or service requirements via multiple access methods (voice, wireless application protocol or web application protocol).

Based upon the parameters included in the search, the system will identify and respond with the most appropriate matches. Referring to Figure 2, the consumer can then refine their search, or review details about each of the matched listings. The listings may include a special deal based off of the consumer's input. An example may include:

Consumer searches:

"Who has a dinner special within the downtown area of Atlanta for tonight"

Location Based Service responds:

"The Tavern Restaurant and Bar is offering you \$15 off of your total dinner purchase of \$40 or more with the use of your American Express Card for your dinner purchase. Please mention offer 10789"

When the consumer makes the search request the information is captured in the usage database within the location based service platform. The response to the request is also captured for tracking purposes. The information that is captured into the usage database may include but is not limited to the following:

- ☐ Campaign Number
- ☐ Merchant Name
- ☐ Consumer Name (or encoded id)
- ☐ Consumer Wireless Number (or encoded id)
- ☐ Campaign Code
- ☐ Date
- ☐ Time
- ☐ Location when making request
- ☐ Offer #

Referring to Figure 3, the consumer would go to the place of business. Optionally, the consumer may present an offer number to the merchant that is optionally generated at time of initial interaction. The merchant would then validate the offer number if provided. After the offer number has been approved the consumer would complete the purchase process by paying for the item with a designated electronic card. When the consumer completes the purchase transaction via an electronic card, the information is captured and is sent to the card issuer. The location service bureau receives the card data within a file in a periodic batch process. This data is uploaded into the location based platform database. Key information found within the electronic card data include but are not limited to the following:

- ☐ Card Number Used
- ☐ Merchant Code
- ☐ Merchant Name
- ☐ Address of Merchant
- ☐ Transaction
 - ☐ Name of Consumer
 - ☐ Amount of the Purchase
 - ☐ Date of Purchase
 - ☐ Time of Purchase

In order for the merchant/advertiser to determine the campaign or deal offering success, the advertiser will access the advertiser portal within the location service platform. Please see FIG 4. The advertiser will then select the usage

analysis tool and the advertising effectiveness component to determine how many people responded to the deal or special offer.

The following is a list of inputs (at a minimum) that may be selected within the Advertising Effectiveness tool:

- ☐ Campaign
- ☐ Date
- ☐ Location Information
- ☐ Category
- ☐ Type of Listing Category
- ☐ Competitive Listings Categories
- ☐ Campaign
- ☐ Date To & From

Selecting and submitting the above information build a query used to explore the advertising campaign data stored in the business content database. The system retrieves data from the usage database to match the system request parameters. The system will then display the resulting response via the web browser.

Examples of the type of feedback the user will receive include (but not limited to) the following:

- ☐ Measure number of customers reached
- ☐ Amount of Tracked Sales
- ☐ Number of Tracked Sales
- ☐ Competitive analysis comparing advertiser listing sales to category sales
- ☐ Cost per Sale
- ☐ Total Sales reached by top 3 demographic segments
- ☐ Demographics such as:
 - ☐ Gender
 - ☐ Age
 - ☐ Ethnicity
 - ☐ Marital Status
 - ☐ Children
 - ☐ Income
 - ☐ Special Interests
 - ☐ Hobby
 - ☐ Education
 - ☐ Homeowner
 - ☐ Car Owner
- ☐ Target Market
 - ☐ City
 - ☐ State
- ☐ Location
 - ☐ Address

Location at historical point of interaction

Summary: The present invention enables the creation of a highly flexible voice recognition capability by building and leveraging grammars in a way then enables highly flexible voice input, while also enabling faster creation and easier maintenance of grammars.

Drawings:

Do	you	have	any	specials	on	dvd	players?
Do	you	have	any	discounts	on	dvd	players?
Do	you	have	any	dvd	players	on	sale?

Figure 14

Do	you	have	any	specials	on	dvd	players?
verb	pronoun	verb	adj	noun	preposition	noun	noun
Do	you	have	any	discounts	on	dvd	players?
verb	pronoun	verb	adj	noun	preposition	noun	noun
Do	you	have	any	dvd	players	on	sale?
verb	pronoun	verb	adj	noun	noun	preposition	noun

Figure 15

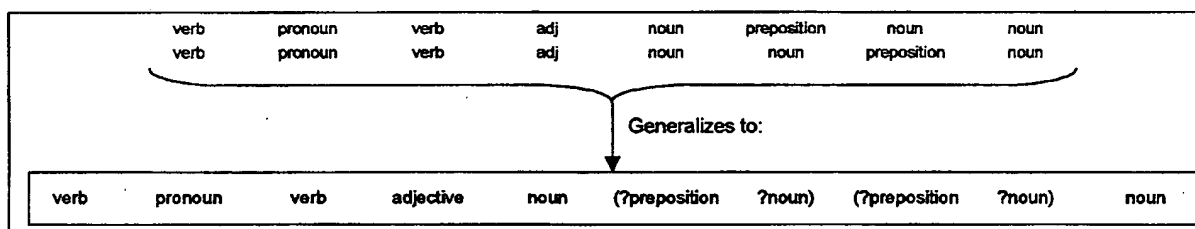


Figure 16

verb	noun	pronoun	preposition	adjective
Do	specials	you	on	any
have	dvd			
	players			
	discounts			
	sale			
	special			
	player			
	discount			
	sales			

Figure 17

Description:

This invention enables a voice recognition system to allow users to be able to request information in many natural ways, without requiring the significant setup and maintenance that is required by current menu-driven implementations.

Altering the mechanism and structure of the "grammars" that are typically defined in a voice recognition system enables this capability. Typical voice recognition systems require a developer to create an all-encompassing grammar which itemizes each possible way a person could utter any given concept or request (see Figure 14). While this enables a system to recognize content with a potentially high degree of accuracy, it places a significant burden on the developer both before and after the system is deployed.

Each of the utterances in Figure 14 has a particular word structure associated with it (see Figure 15). While some utterances will leverage the same word structure to convey a similar concept or request, other utterances will leverage a different word structure to convey a similar concept or request. Therefore, the grammar is broken up into parts of speech where the most common words in each part can be reused and only those parts specific to the application have to be created.

The initial step leveraged by a system that uses this invention is to define a relatively small, yet powerful set of word structures that most or all user utterances will follow. Each word structure is a combination of one or more parts of speech, including but not limited to: nouns, verbs, adverbs, adjectives, prepositions, pronouns, etc.

The second step leveraged by a system that uses this invention is to create a sub-grammar for each part of speech that includes the unique list of words for each part of speech (see Figure 16). For example, referring to Figure 17, there are two words in the "verb" part of speech: "Do", and "have", while there are five explicitly identified and four implicitly identified words in the "noun" part of speech: "specials", "DVD", "players", "discount", "sale", "special", "player", "discounts", "sales".

Once these sub-grammars are created, the voice recognition system leverages the sub-grammars to determine possible recognition matches.